AMERICAN VETERINARY REVIEW,

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EDITORIAL.

"FOR ALMA MATER'S SAKE."—Our dangerous position in the matter—reasons for our persistence—the sinking fund of the American Veterinary College—various attempts made to raise it—their failure—complete and partial—results of the efforts—the enthusiasm of all and in particular of a few—a new plan proposed by Dr. Coates—his motto and his chances of success. CONTAGIOUS PLEURO-PNEUMONIA IN THE UNITED STATES AND ENGLISH RESTRICTION.—Its recognition in this country several years ago, and the English embargo—commissions—Bureau of Animal Industry's successful work—the disease crushed little by little—it is almost all destroyed—action of Hon. J. M. Rusk, Commissioner of Agriculture—an *American* bureau on *English* land—three American veterinarians under the leadership of another American veterinary surgeon starts for Europe—our best wishes and hearty hopes for their success. THE SEPTEMBER MEETING OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION. Director ARMAND CHARLES GOUBAUX'S death.

"FOR ALMA MATER'S SAKE."—It is not wholly an uncommon occurrence in the experience of zealous and earnest advocates of new and beneficent enterprises, to find themselves in danger of becoming involved in complications and embarrassments of such a nature that they feel almost compelled to surrender their purpose and abandon the efforts upon which they had so resolutely entered. No one need permit himself to be surprised or disappointed by such a condition of things, nor should any one's resolution fail before such a temptation. Yet we find ourselves, just at the present time, in a state of feeling somewhat like this, in respect to the contemplated new veterinary college edifice which we earnestly and hopefully desire to see taking its place among the public buildings of

our city, with its doors open for the reception of a coming host of incipient veterinarians.

We have labored for the creation of a sinking fund for the building of the American Veterinary College, in various methods which have been suggested; we have kept the subject before our readers as best we could, and as well and fairly as could be considered consistent with the position and duty of a publication which disclaims the character of special organ of any interest or locality in particular, and yet we find ourselves once more calling the attention of our readers to the same subject. Well, the only excuse that we feel called upon to make is that the subject is one of sufficient importance to justify its continued discussion—and this shall be our limit—until the publication of the final report of the inaugurating ceremonies, upon the completion and dedication of the finished structure.

Many plans have been prepared and submitted, and proposal upon proposal has been made, of which the realization seemed to be more or less feasible, but one and all, even to the last one, which was brought forward in the REVIEW for July, have as yet failed to produce adequate results; at least, none have been of such a nature as to give assurance that the object in view, to wit, the erection of a building for the college, could be favorably entertained upon the basis which it offered. It is not by any means to be inferred from these remarks, however, that the idea of an adequate and permanent home for our college is to be abandoned. The failures at which we have hinted do not mean the demise of the project, for although the call last made upon the alumni failed to produce just such an answer as we desired and partly anticipated, yet it did induce a response, and elicited the fact that many gentlemen were willing to answer the appeal, and answer it well. Nor was it from any mere personal feeling or motive of ambition or interest or of prospective return; it was for *alma mater's sake,* and though the total amount donated was not great nor magnificent, still it was significant even in its small dimensions. These successive, though partially unsuccessful efforts have, however, been followed by

another important result. They have inspired and fostered in the minds of some, a desire and a will to succeed where others have failed, and among these we are glad to name Dr. Coates, so well known to his brethren for his efforts and services in behalf of the school from which he graduated. A plan has been devised by this gentleman which we hope will not fail of success. His object is, as it has always been, the elevation of his profession at large, and especially the elevation of the American Veterinary College, which is his own alma mater, to the rank of the first in the land among its coadjutors; and with such a purpose in view, every one must wish him a better realization of his designs than those which have gratified the authors of others which have preceded his own. His motto is, "It is *for Alma Mater's sake*," and who of his brother alumni will decline to listen to him, or consent to remain deaf to the voice of his appeal?

CONTAGIOUS PLEURO-PNEUMONIA IN THE UNITED STATES AND ENGLISH RESTRICTION.—It is now several years since the recognition of the prevalence of contagious pleuro-pneumonia over a very extensive area of this country was known and acknowledged by every one interested in the cattle trade. Naturally, such a discovery when made, became the cause of wide-spread excitement among person interested in the exportation of cattle to Europe, and the Blissville nursery of the disease soon became the talk of every veterinarian in the Eastern States.

England at once placed an embargo upon American cattle, and their exportation was rendered very difficult, and only allowed under special conditions. Of course, effectual measures must be devised to meet this urgent state of things. Accordingly commissions were appointed and investigations were ordered, and experts were sent to England to ascertain whether existing restrictions could not be removed, or at least amended and modified.

The Bureau of Animal Industry was organized, and its work soon arranged and actively persevered in. Yet notwithstanding all this, the shipment of cattle from the United States continued to be subjected to the same strict regula-

tions, and still suffered greatly from the comparatively unjust severity of its first conditions. The subject, however, was one of too much importance to be overlooked by the general government, or fail to receive due attention from the national guardians of the interests of the people. The labor of the Bureau of Animal Industry was not wasted, and after several years of careful and well organized effort, the disease was by degrees effectively subjugated. State after State, and county after county, were relieved from its ravages, and it is now so effectually under control that it may be safely predicted that in a very short time the United States authorities will be in condition to announce to the world the complete extirpation throughout all her borders of contagious pleuro-pneumonia, an announcement which few, if any of the European States will be able to match. The energy which the present Commissioner of Agriculture, Hon. J. M. Rusk, has practiced in the management of this important question reflects the highest credit upon that gentleman, and it is through his recent proclamation, together with the active work recently organized by him in Long Island, that the promulgation in a very short time of the official declaration of exemption has become a possibility and a fact.

Nor is this all. Not only will contagious pleuro-pneumonia be, in fact, stamped out and destroyed, and our exported cattle show no traces of it when they leave our ports, but they will also arrive outward as they started, in a healthy condition, and that condition will be substantiated by means of official veterinary inspection, the government at Washington having decided to station a special agent in London, who will have acting under him *three other veterinarians*, stationed respectively in *London, Liverpool and Glasgow*, and, no doubt, a faithful performance of their duties will prove in a very short time the injustice of the charges made against us in alleging the shipment of lung-diseased animals from the United States. The inspectors are to report for service on the 1st of August, and will consist of Doctors Wray, Melvin and Ryder, with Mr. J. H. Sander, of Chicago, as special agent of the department, but not in a professional capacity. The three first

named gentlemen are all *American veterinarians*, and experts in the inspection of pleuro-pneumonic and tuberculous cattle, and they will be sure to do their work well.

We should all feel gratified, as veterinarians, by these appointments, which may well be regarded in the light of another honorable recognition of the claims of veterinary science by the authorities of the general government. It furnishes another among many illustrations of the progress which it is making, surely, and not slowly, either, in compelling the public acceptance of the value and importance of the functions and adaptations of its specialties, and its place and uses among related branches of knowledge and of public economy, and tends strongly to indicate the right place and the proper function of the veterinarian in scientific society and the world.

Dr. E. Salmon, the Chief of the Bureau of Animal Industry will accompany the party in order to see that the work is properly inaugurated. Let this new commission in leaving our shores, be assured of our best wishes and of our hearty hopes for the success of their new and important labors.

THE SEPTEMBER MEETING OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION.—In our last issue, in connection with the expression of some of our apprehensions relating to the next meeting of the United States Veterinary Medical Association, we published an open letter from one of our Western friends, in the hope that if any answer was to be made we should be able to present it to our readers in our August number. Though an answer has been prepared, we regret that if it has been sent to us, its publication cannot take place before the September issue. We waited for it as long as we could, and even longer than we ought, and can wait no longer if we wish our publication to be issued at the proper date.

ARMAND CHARLES GOUBAUX.—We have received as we go to press the sad news of the death of Honorary Director Armand Goubaux, the last of our teachers when we were a student in Alfort. We make a simple mention of this sad event iu this issue, and will pay it more dutiful respects later on.

ORIGINAL ARTICLES.

COLD ABSCESSES AND THEIR TREATMENT.

By W. J. Coates, M.D., D.V.S., New York City.

A most important and at the same time common occurrence is that which is known as cold abscesses at the base of the neck or of the inferior and lateral cervical region at the junction of the shoulder. It consists essentially of an accumulation of pus in the deeper layer of muscular and areolar tissue, situated principally beneath the mastoido-humeralis muscle, just external to the jugular groove of the neck, in which lies the jugular vein and carotid artery, taking place either on the right or left side, giving rise to a considerable swelling and the appearance of a tumor.

This condition is rarely met with by the practitioner when it first makes its appearance, as it is caused by direct pressure of the collar, and the owner of an animal attacked, thinking it nothing serious, treats the swelling by all remedies known to him, for a shorter or longer period and, seeing no improvement, consults a veterinarian, who often tries various remedies for weeks and months without success.

The etiological factor is direct pressure of the collar, producing a contusion of the deeper layers of muscular structure, with a capillary hemorrhage in the areolar tissue, forming a nucleus from which structural changes take place. The blood becomes encapsuled by a firm layer of fibrin or plastic material being deposited, forming a wall; the contents of the cavity undergoing changes and pus forming. The walls become thicker by the deposit of plastic matter, which indurates and hardens, forming a capsule one to three inches thick, while the cavity is small in comparison to its membrane and contains a thin looking pus; in other cases the accumulation of pus is considerable and the walls thin, taking the appearance of an acute abscess, but in the majority of cases the fluid portion of the pus is absorbed, leaving a cheesy mass with thick fibro-plastic walls.

From the character and extent of the pathological changes taking place in the deeper muscular layers and areolar tissues of that region of the neck, and the pressure produced thereby, an œdema takes place, causing a soft doughy swelling, considerably diffused, extending on all sides of the seat of injury, which may cause the skin to be raised an inch or more and circumscribed eight or ten inches, but in the course of a few days the œdema begins to decrease by absorption or infiltrates through the cellular layers to the lower portion of the pectoral region, gradually passing away.

In cases where there is a considerable accumulation of pus and a tendency to point, there will be extreme sensitiveness, but in the majority of cases there is very little pain on pressure, and the tumor becomes more and more defined, and can be moved about from side to side, resembling a fibrous structure, but not with the same looseness of a well defined fibroma, which may lie loose in the areolar tissue or be held by a pedicle. After the œdema passes away and the tumor becomes more prominent, it gradually increases in size and becomes very large, with no tendency to point, and becoming firmer and harder, though fluctuation can be detected.

At times it becomes very difficult to diagnosticate between these abscesses and other conditions resembling them, on account of the impossibility of determining fluctuation. The history of the case helps considerably in forming an opinion; the mode of origin, its slow and steady growth, its resistance to external applications, the peculiar character of the swelling and the absence of pain—all of these help to decide the nature of the enlargement, but to determine the character without a doubt is by exploration; an exploring needle or trocar and canula should be introduced and the nature of the fluid, if present, will decide. In the absence of pus, serum or blood, the tumor being well defined and movable, a fibroma is usually met with, but sometimes, on account of the cavity being so small and so deeply seated, there is a possibility of not plunging the exploring needle into the contents of the cavity and misleading the surgeon.

The treatment of these abscesses has been a vexed ques-

tion, as it is one of the most troublesome of all forms of abscesses situated on the external portion of the body to treat satisfactorily. Absorbents have been used and failed, in the form of blisters, ointments and solutions externally and iodides internally; aspiration has been practiced and caused the swelling to subside somewhat, but it has filled up again; escharotics have been effectual after aspiration in some cases and have failed in others, leaving a fistulous tract. Making an incision into the tumor and cutting it out piecemeal with scissors, and controlling the hemorrhage with the actual cautery and with pressure, has been successfully practiced. Passing setons saturated with astringent or caustic solutions have failed, also the injection of solutions in various portions of the tumor. The repeated injection of caustics has done a great deal of harm by causing inflammatory action and multiple abscesses forming. Excision has been resorted to, but is objectionable on account of the excessive hemorrhage which occurs and the necessity of throwing the animal in the majority of cases. Excision can be accomplished readily without pain by the use of cocaine.

The method of operation and the habit and skill of each surgeon may accomplish a good result in various ways. Some veterinarians use an expectant plan of treatment where a want of faith in surgical measures exclude operative interference.

No doubt these means have been successful and every surgeon adopts the plan with which he has had the best results, but seeing all these methods employed and employing them myself, I have found that the most effectual plan is with the actual cautery. The simplicity, safety and efficiency of this method make it desirable that it should be better known. The only plea which I offer for removal with the actual cautery in preference to the knife, is to avoid hemorrhage.

On the start or as soon as the œdema takes place, hot fomentations are indicated to reduce the swelling and hasten suppuration, which in a few cases will develop rapidly and point, so that fluctuation can be detected and the abscess opened with a bistory, the contents evacuated, the healing

process taking place rapidly; but in the majority of cases no fluctuation can be felt on the subsidence of the œdema, the tumor remaining firm and hard. It is in these cases that such good results have followed puncturing with a pointed iron, heated to a white heat and driven in four or five inches before pus can be detected. It is better to have two irons, made in the shape of firing irons, bent at right angles with a prong, one five or six inches in length, one inch in diameter at the base and tapering to the point; the other the same length but thicker.

This is a most radical operation and the method of procedure is to plunge the small iron into the hard indurated mass, so as to penetrate the center of the cavity; it may have to be repeated three or four times in the same aperature before pus is reached, as I have often driven the iron in full length before pus would escape; then the larger iron is introduced to produce a larger opening and to cauterize the bottom of the cavity and the thickened walls. In about six days a large slough takes place, leaving a healthy granulating surface, which heals without difficulty, an adhesive inflammation being induced with no hemorrhage to arrest.

After cauterizing, the surrounding parts become greatly œdematous, which gradually subsides as the sloughing process takes place, the adjacent tissues become hardened and indurated, but gradually soften and regain their normal appearance as the cavity closes. By using basilicum and populum ointment in equal parts, smeared over a pledget of oakum and introduced in the tract, the softening of the tissues will take place more rapidly and at the same time act to prevent reunion of the granulating walls and to secure proper adaptation to the bottom of the wound. The result of this procedure is simply to keep the margins of the walls from uniting, and cause the wound to fill by granulations from the bottom. The wound usually heals from the bottom and is entirely closed up in three or four weeks and the animal is able to resume his work.

Some practitioners claim that the treatment by the actual cautery has met with poor success in their hands. The parts apparently healed but had a recurrence of the same in a few

weeks; or that a sinus was the result, with a chronic fistula. This is true, for many such cases come under my observation, having been treated by veterinarians with such complications resulting. The cause of failure in producing a radical cure has been, in cases where there has been a recurrence of the abscess, in not cauterizing the cavity sufficiently or allowing the tract to close up too soon. When cases of fistula result it is where tents of oakum are continuously introduced, forming a source of chronic irritation and a pyogenic membrane forms in the tract. The obliteration of this callous surface must be effected by means of processes for establishing healthy granulations in the tract; so soon as the pyogenic membrane disappears from the walls of the canal and granulations are set up, an effort should be made to bring about the process of union by granulation.

There is a serious complication liable to take place from cauterization with the actual cautery. At the time the sloughing process takes place it may carry away a portion of the large bloodvessels, giving rise to a profuse hemorrhage, which is difficult to control, requiring from twenty-four to forty-eight hours of firm pressure and plugging of the cavity. Fortunately this accident has only taken place once in my practice and was with the utmost difficulty stopped by plugging and firm pressure with a strapping apparatus applied around the base of the neck and body.

This serious complication can be overcome by not cauterizing too severely on the jugular side of the neck. In all cases where the enlargement lies close to the jugular groove the mass should be pushed over by an assistant before using the cautery.

A COMPARATIVE STUDY OF ANÆSTHETICS.

By Dr. G. Archie Stockwell, F.Z.S.,
Member of the New Sydenham Society, London, Eng.

The question of preference in the selection of an anæsthetic for general or even special purposes, is still in many quarters a moot one. Chloroform, ether, methylene chloride,

ethyl bromide, nitrous oxide, and the so-called "triple" or "A. C. E." mixture (alcohol 1; chloroform 2; ether 3 parts), have each staunch adherents. In the medical and scientific press also, periodically appear essays and discussions having for their aim the establishment of the superiority of one or another of these agents, but as such for the most part are manifestly of partisan character, they contribute little to the sum total of our knowledge.

It is obvious that too great care cannot be exercised in the choice of an anæsthetic, not alone from the physiological relations of the agent, but also as regards its purity and strength. Much of the opprobrium that has, from time to time, been heaped upon each and all, had its origin in the employment of crude, weak and impure products.

It may further be said that neither clinical experience or experimental research has been able positively to demonstrate the exact conditions in either man or animals to which any one anæsthetic is specially applicable, or even under which it can be most advantageously employed, for the information extant is almost wholly made up of negations. Each individual patient requires individual study, since what may be "meat" to one, may prove "poison" to another, and the final selection, if judiciously made, will be based solely upon the physiology and pathology of the disease, the physiological manifestations prone to follow the use of the anæsthetic, and racial and individual idiosyncracies. Finally, the anæsthetic chosen, despite the evidences that may be adduced by its friends in favor of inoccuousness, should be employed with the greatest circumspection and care, since the very conditions that render anæsthesia possible are always grave sources of danger—a danger that may be increased or diminished by obscure morbid conditions. When we consider the vast numbers of men and animals that yearly undergo anæsthesia, and the ignorance and carelessness that so generally attends the administration of an anæsthetic, it must be confessed the dangers are in the main more apparent than real, or else the small ratio of fatalities is the result of "good luck" rather than expert management; it only proves that the vital spark is more

persistent and resistent along certain lines than our physiological studies would lead us to believe, and that morbid conditions that threaten life, perhaps, in one direction, are really saving factors in another.

Chloroform: Formyl Ter-Chloride.

For physiological experimentation, and in the domain of surgery, general or special, chloroform is undoubtedly the favorite anæsthetic. I will go even farther and assert that for the majority of animal life, man perhaps excepted, it is the preferable agent. It is one of the least obnoxious as to odor and vapor, is rapid and permanent in effect, convenient as regards bulk and portability, and recovery from its influence speedy. These are desirable and important considerations, but as regards man, are over-borne by certain specific disadvantages.

Chloroform has first a stimulating, followed by a sedative action upon the brain, and derives its anæsthetic power from the paralyzing influence it exerts upon the ganglionic centres of the sensory nerves, the reflex functions of the cord at the same time being held in abeyance. So far, its action is practically identical in man and lower animals; but when pushed to profound narcosis quite different phenomena may supervene. And just here it seems necessary to refer to the late Hyderabad Chloroform Commission.

This Commission was the second of its kind and title, and like the first, owed its inception to Surgeon-Major Edward Lawrie who, confessedly, was animated with the desire of vindicating his former teacher, Prof. Syme; the latter, as a follower of Thomas Wakely, was accustomed to teach that the fatal effects of chloroform arose from paralysis of respiration solely. The first Hyderabad Chloroform Commission attracted little attention, since it was composed of gentlemen devoid of professional reputation outside of their own social circles; and the second would have been equally obscure but for the association therewith of Dr. T. Lander Brunton as a representative of the *Lancet* of London, though why a *physi-*

cian should have been selected instead of a surgeon* or professional anæsthetist, is beyond comprehension.

The reports of both Commissions are admitedly and confessedly partizan, and though the statement is made that the object was experiments "to demonstrate the effect upon blood pressure, heart and respiration of the inhalation of chloroform, ether and the A. C. E. mixture," a second announcement declares the purpose to have been "testing the suitability and safety of chloroform as an anæsthetic."

The reports alike bear the impress of Dr. Lawrie's pen, and the first displays an animus against the feeling and watching the pulse in chloroform administration that is by no means concealed in the second, and the latter boldly asserts as facts the following:†

Chloroform when given continuously by any means which ensures its free dilution with air, causes a gradual fall of the mean blood-pressure, providing the animal's respiration is not impeded in any way. * * * If the chloroform is less diluted the fall is more rapid, but is always gradual so long as the other conditions are maintained; and however concentrated the chloroform may be, it *never causes sudden death from stoppage of the heart* (Paragraph No. 1). * * * The theory which has hitherto been accepted is that danger in chloroform administration consists in the stoppage or slowing of the heart by vagus inhibition. This is now shown to be absolutely incorrect (Paragraph No. 18).* * * Granting, then, the truth of Ringer's conclusions from experiments upon the frog's heart (which have not been repeated and confirmed by the Commission) that chloroform has a gradual paralyzing effect upon the heart tissue, we must conclude that such an effect, in the degree in which alone it could occur in the practical inhalation of chloroform, would rather be a source of safety than of danger (Paragraph No. 19). * * * In * * * the case of a dog that had had morphine, remarkable slowing and even temporary cessation of the heart's action occurred again and again at the same moment respiration stopped, but the heart invariably recovered itself. * * * The failure of the heart, if such it can be called,

* The distinction between the physician and the surgeon is sharply drawn in Great Britain, both in study and practice.

† *Vide*, *The Lancet*, London, January 18th, 1890.

instead of being a danger to the animal, proved to be a positive safeguard, by preventing the absorption of the residual chloroform and its distribution through the system (Paragraph No. 22).

Morphine appeared * * * to render the rise of blood-pressure that occurred when chloroform was discontinued, slower and less complete, and to bring about a more or less permanent condition of anæsthesia (Paragraph No. 31).

Chloroform has no power of increasing the tendency to either shock or syncope during operations. If shock or syncope from any cause does occur, it prevents rather than aggravates the dangers of chloroform inhalation (Paragraph No. 37).

The experiments on dogs that had been dosed with phosphorus for a few days previously, show that the fatty and consequently feeble condition of the heart and other organs so produced, have no effect in modifying the action of chloroform. * * * Numerous attempts were made in these animals to produce shock by operations in recumbent and vertical positions, but without any more result than in those that were healthy (Paragraph No. 38). The truth about fatty heart appears to be that chloroform *per se* in no way endangers such a heart; but, on the contrary, by lowering blood-pressure, lessens the work the heart has to perform, which is a positive advantage. But the mere inhalation of chloroform is only a part of the process of administration in practice. A patient with an extremely fatty heart may die in mounting the steps in front of his own hall door, or from fright at the mere idea of having chloroform, or of undergoing an operation, or during his involuntary struggles. Such patients must inevitably die occasionally during chloroform administration, and would do so even were attar of roses, or any other harmless vapor, substituted for chloroform (Paragraph No. 39).

As regards the effect of chloroform upon different animals, it may be said to be the same as far as its anæsthetic action is concerned (Paragraph No. 42). * * * The cases * * * are quite sufficient to show that animals are just as liable to death from careless administration of chloroform as human beings; and the accidental deaths which occurred during the experiments of the Commission afford the best possible proof that the effects of chloroform are identical in the lower animals and in the human subject. The statement so frequently made that dogs are more resistant to chloroform than human beings, is entirely incorrect. (3d paragraph under caption of *Accidental Deaths*).

The experiments with ether show that it is impossible to produce anæsthesia with this agent unless some form of inhaler is used which thoroughly excludes the air (Paragraph No. 45). If surgeons choose to be content with a condition of semi-anæsthesia, it can, no doubt, be produced with perfect safety, though with discomfort to the patient, by ether held rather closely to the mouth. Such a condition of anæsthesia would never be accepted by any surgeon accustomed to operate under chloroform. If more perfect anæsthesia is required, it can be procured by excluding the air more rigidly, *but then there is exactly the same danger as in giving chloroform* (Paragraph No. 46).

Two other statements emanating from Dr. Lawrie are of interest in this connection, viz.: "That since the year 1855 in Great Britain there has been no death from chloroform recorded in which it was proved that the respiration alone was attended to throughout the inhalation," and that: "Among Scotch surgeons, who are accustomed to regard paralysis of respiration as the sole danger in chloroform anæsthesia, deaths from chloroform are lacking, or at least extremely rare.*

The claims of the Commission as just given, evidence that its members are ignorant that the cases of cardiac syncope from chloroform are those in which semi-asphyxia is produced and followed by deep inspiration. It was along this line the experiments should have been conducted, which was done in only four instances. Again, it has always been maintained by the upholders of the heart-syncope theory, that such cases are of extremely rare occurrence—only once in two or three thousand instances--and that it is only by a definite combination of circumstances that sufficient chloroform can be introduced into the blood. Because the Commission did not obtain this combination in less than five hundred experiments—really in only *four* experiments—they confidently assert such cannot exist. Surely this is not science!

It must be remembered also, in spite of the dictum pronounced that the results attained by anæsthesia in lower animals and in man are precisely the same, that such is value-

As I am obliged to quote this from memory, not having the data by me, it is possible the wording is not exact, though I can vouch for the correctness of the sentiment implied.—*Author.

less, coming as it does from individuals possessed of but the most meagre knowledge of comparative physiology and pathology; moreover, the statement is false in more than one particular.*

Dogs are not human beings, and researches and experiments have repeatedly proven that exact parallels are impossible. To morphine, the Commission say, "pariah dogs are very indifferent." Such is not true of man, neither is it of domestic canines generally, who for the most part are peculiarly sensitive to opium and its derivatives, for reasons obvious: This is asserted by Youatt, Blaine and Mayhew, and repeatedly proven in my own personal experience. Even domestic canines of the same precise breed vary materially according to surroundings, (climate, latitude, altitude, etc.,) and more so than man, as they possess extremely impressionable nervous systems; and the dog born and bred in Europe has the vascular system much greater developed than the same animal reared in America. Prof. H. C. Wood† justly remarks, criticising this statement of the Commission: "We have given elaterium to dogs until it has caused death, but it has not purged. Suppose that every dog in India had had administered to it elaterium without the production of purgation, would that prove that elaterium does not purge man?"

Again, regarding the absence of *shock*, and inability to produce in the animals experimented with, and upon which no inconsiderable stress is laid, it is well known to comparative physiologists that, while shock may obtain in higher degree than in man in some animals—notably certain of the *Felidæ* and the *Leporidæ*—such is practically non-existent in most feral creatures, especially the feral *Canidæ*, and the pariah dog is practically of this class.

Also, for all three hundred and sixty pariah dogs in India may have died through respiratory failure as the result of

* This premise, founded on the supposition that like physical conformation begets like physiological conditions and attributes, is possessed of neither reason or fact. The comparative physiologist would never have fallen into this error.—*Author.*

† *Medical News*, February 22d, 1890.

chloroform vapor administered, it must be remembered that a far greater number in Germany, France, England and America, under like experiments have succumbed to cardiac arrest. The experiments of Ungar and Strassman* are conclusive in this respect.

But we may believe also, that in many instances animals, to whom lethal doses of chloroform are administered, do succumb to pulmonary paralysis, but it is denied by all competent and conscientious observers that this is either an invariable or even common sequel in human subjects; the majority of deaths among the latter are wholly inconsistent with such view, for the fatal result is usually sudden; the patient in the midst of violent struggles, and after a deep inspiration becomes practically lifeless, the pulse ceasing, or sometimes becoming distinctly or gradually feebler, before cessation of respiration. Further, in chloroform accidents in man of the sudden variety considered to be due to cardiac syncope, certain conditions are present which are difficult to obtain in animals.† It must be admitted also that when laboratory experiments clash with clinical observations, the latter must always have precedence; the former only lead the way to those studies whereby the final verdict must be determined.

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* *Virchow's Archives*, B. D., 115.

† Since the report of the Commission, a series of parallel experiments were undertaken by Prof. H. C. Wood and H. A. Hare, of the University of Pennsylvania, which have an important bearing. They say (*Medical News*, February 22d, 1890):

"As we use between us, in the laboratory of the University, many dogs yearly, a very large proportion of which are finally killed by chloroform, we may be excused for our positive assertions that chloroform *is a cardiac paralyzant*, and does kill dogs by direct action upon the heart or its contained ganglia; especially since we have been strengthened in our opinion by the fact that Dr. Reichert, Professor of Physiology in the University, has reached results confirming our own, and has frequently demonstrated the same to the University classes. * * * It has been the custom of one of the authors of this paper, in his lectures before the University class, to demonstrate by means of the respiratory tambour, the mercurial manometer, and the kymographion, a continuation of respiratory movements after cardiac arrest through chloroform. Further than this, we have at various times taken tracings proving the same facts.

"The statements that have been recently made in the Indian journals, and in the London *Lancet*, have led us to re-examine the subject, and to make a

Dr. Snow long since reconciled the differences between the results of experiment and clinical practice, by showing that fatalities might happen in one of two ways, according to the amount absorbed:

1. Chloroform gradually inhaled until death results, kills by gradual paralysis of respiration, the heart continuing to beat after cessation of respiration:

2. But when a large dose of the drug is suddenly taken into the system, the heart ceased beating before the respiration stopped:

3. It is also thought that this sudden paralysis might set in before insensibility is produced. The cardiac paralysis is considered to be the chief factor in the fatal result, because efficient artificial respiration does not resuscitate these cases. There is an impression that cessation of the respiration may be entirely remedied by artificial respiration, but that the affection of the heart is necessarily fatal.*

These views are further confirmed by the Commission of the Medico-Chirurgical Society, London, 1864, and by a Committee of the British Medical Association in 1879, who state:

Chloroform has sometimes an unexpected and apparently capricious effect upon the heart's action. It may cause death in dogs by paralyzing either the heart or respiration. The

series of experiments upon it with great care. We have also varied and extended these experiments in order to determine whether chloroform paralyzes the heart by direct influence, or by an indirect action through the vagus. * * In all cases accurate tracings have been made by means of the kymographion and the respiratory tambour.

* * * "The experiments * * * show that chloroform acts as a powerful depressant poison upon both respiration and circulation; that sometimes the influence is most felt at the heart, and death results from cardiac arrest; that in other cases the drug paralyzes primarily the respiratory centres, whilst in other instances it seems to act with equal force upon both medulla and heart. So far as practical medicine is concerned, it makes little difference whether the heart stops just before or after respiration, so that those cases in which cardiac and respiratory arrest are almost simultaneous, are, for the purposes of the clinician, the same as those in which arrest precedes respiratory paralysis. Finally, the results of our new experiments also coincide with our previous experience in the laboratory, and with what we believe to be the general belief of physiologists—that cardiac arrest is specially prone to occur when chloroform is administered rapidly and in concentrated form."

* *Medical Chronicle*, London, vol. xii, p. 2.

variations in this respect seem to depend to some extent on individual peculiarities of the animals.*

Dr. Alexander Wilson, Anæsthetist to the Royal Infirmary, Manchester, makes several objections, that are most pertinent, to the conclusions of the Hyderabad Commission regarding the effect of chloroform on man. He says:

First, there is the difference which may exist in the action of chloroform on the heart of man and animals. It has been shown that the suddenly fatal cases are rare in human subjects in which there is any impediment to free expansion of chest; e. g., Clover has pointed out that a phthisical patient is less likely to take a fatal dose of chloroform than one with healthy lungs, because his chloroform-absorbing capacity is diminished. Again, it has been noted that but few patients die from chloroform when it is inhaled lying on the side; also that few, if any, sudden deaths are reported in case of ovarian tumors. The explanation of these cases is that the interference with full expansion of the lungs, by the position or presence of the tumor, prevents the lungs taking in the unnecessary fatal dose. On the other hand, the greater number of the suddenly fatal cases occur in people with healthy chests and large vital capacity, in which the patient being in the natural upright position, can give the respiratory muscles full play and completely fill the chest. Thus it is worth considering if the holding of a struggling animal, such as a dog, might not so interfere with its breathing as to prevent the full dose being taken, especially as the animal would not be likely to be held in a natural position. There is an indication in the report that, in at least some cases, the holding of the animal did actually interfere with respiration. If it did so in one case, it probably did in many, especially as a dog's thorax is so shaped that to hold the fore legs together in front of it would prevent the complete expansion of its chest, and so prevent it suddenly taking a fair dose of chloroform vapor. In animals too, we have an absence of the desire to inhale freely. In at least one case reported in man, the wish to inhale chloroform freely contributed largely to the fatal result.

With the human race the "subject" is generally young or middle aged, with an expansible chest, and the anæsthetic is willingly inhaled, quietly at first, until semi-unconsciousness is produced, when the fauces and glottis are insensitive. Then,

* *British Medical Journal*, 1879, vol. 1, pp. 1 and 921.

during the struggling, with or without holding the breath, the patient—often in an upright position and having his arms fixed by assistants, which gives the respiratory muscles good purchase—gets one or two deep inspirations at the greatest advantage and obtains the maximum amount of chloroform. There is the desire to get under the influence of the drug, the voluntary inhalation followed by the still steady conscious anxiety to inhale more, and then the involuntary deep inspiration in the natural position in which such inspiration can be best taken.

It will be observed that all these are conditions difficult and often impossible to obtain in experiments on animals, and it is only under such conditions that cardiac paralysis has been produced in man. The interval between the stoppage of the heart and the respiration is so short, that these points, trivial as they may seem, may easily be of importance in modifying the result.

Aside from the foregoing there are other serious objections to the acceptance of the claims of the Hyderabad Commission. For one thing, I opine it will require something more than mere assertion backed by phosphorous experiments upon dogs in whom shock is practically non-existent, to convince physiologists and pathologists that the vapor of chloroform in the presence of a fatty heart, is as inoccuous as "attar of roses." Even the association of the name of so talented a *physician* as the editor of *The Practitioner* is not convincing, as in spite of his deserved reputation as an author, he has on more than one occasion proven himself most fallible as regards the physiological action of anæsthetics—for instance in his assertion that small doses of chloroform are more apt to produce death than large, because "the reflex contraction of the vessels is destroyed whilst the heart is stopped or slowed, so that the irritation of a sensory nerve may produce syncope by stopping the supply of the blood from the heart while the blood still flows rapidly from the arterial system through the capillaries into the veins;*" a statement that, if true, would

* Brunton's *Materia Medica, Pharmacology and Therapeutics.*

inculcate more cases of heart failure under ether than chloroform, since the former is more irritating to the upper air passages.

Again, Dr. Lawrie's assertion that no death has occurred in Great Britain through chloroform when the respiration alone was attended to, is not borne out by facts. A notable case is recorded in the *British Medical Journal* for 1884,* and Dr. Wilson (just quoted) declares † "there are several cases where the respiration only was attended to, and there are many more in which respiration was attended to as fully as possible." Equally untrue is the comparison of chloroform anæsthesia in Scotland and England, for while fewer people die in the former country, fewer people inhale it. The population of Scotland is less than four millions, while that of England is more than twenty-nine millions, and careful examination of medical literature from 1878 to 1885 shows there were fourteen deaths north of the Tweed against one hundred and ten in the south; or in other words the death rate in Scotland is one in 285,714 against in England one in 263,636, a difference practically inappreciable.

Again, even supposing the claims of the Commission could be unreservedly accepted as regards the experiments conducted, those made for their teachings, that: "It has now been demonstrated that this anæsthetic may be given in any case requiring operation in perfect safety," and "deaths from chloroform are not inevitable, therefore they are preventible and by due care in administration may be avoided"‡—cannot be. The Commission seem to have forgotten that their own showing reveals another danger, even more serious than cardiac syncope, viz. paralysis of the vaso-motor centre. This may set in suddenly, without warning, and is as far beyond treatment, and as fatal, as cardiac paralysis; and when death occurs from this cause, it is clearly imaginable that the vaso-motor centre may be hopelessly damaged or rapidly reaching that stage, while the pulse is still present and the heart at-

* Vol. ii. p. 811.

† *Medical Chronicle*, vol. xii. p. 9.

‡ *Lancet*, London, January 18, 1890.

tempting to keep up the pressure (so that for some seconds there may be a deceptive condition in which both pulse and respiration are present) yet a fatal termination is imminent. That this death from vaso-motor paralysis does sometimes occur in man, is shown by the very rapid running pulse mentioned in some cases that are on record, as preceding the fatal termination. Then it is seen that the work of the Commission gives no greater confidence in chloroform than was had before: and it scarcely needed the name of the Nizam of Hyderabad to impress facts that have been known to practical anæsthetists for a quarter of a century.

There are also certain other pathological features connected with the administration of chloroform to dogs, and possibly also to man. Ungar discovered that animals, especially canines, chloroformed for several hours at a time and upon successive days, showed upon autopsy, indubitable evidence of fatally degeneration of (1), the heart and liver, (2), kidneys and muscular structure, and (3), gastric and mucous membranes generally.*

Strassman, as the result of independent experiments, corroborates Ungar, and sums up his researches as follows:

1. After chloroformization, in dogs, there can be demonstrated a fatty metamorphosis of the liver; the heart may partake of the same changes as a secondary result—other organs are seldom affected. The changes consist of true fatty degeneration and not of fatty infiltrations.

2. Subsequently to the usual chloroform narcosis, and when recovery therefrom has apparently taken place, a fatal result is occasionally observed to occur.

3. Inasmuch as in the fatal cases the heart changes were found to be particularly well marked, these latter may reasonably be assumed to have been the cause of death.

4. In non-fatal cases the evidence of degeneration changes are not found after several weeks.

5. These changes are particularly prone to occur in those in whom debilitating influences, such as hunger, loss of blood, etc., can reasonably account for the susceptibility to the undue action of the anæsthetic. In young and vigorous animals, a greater power of resistance counteracts a tendency to these changes.

* *Virchow's Archives*, B. D. 115.

Summed all up, we may conclude that the faults of chloroform are:

1. Danger of death from heart paralysis, most frequent, perhaps, in man.

2. From respiratory paralysis, more frequent in animals, and almost invariable in those that are feral, with two or three exceptions.

3. From paralysis of the vaso-motor centre, comparatively infrequent at all times, but probably less so in man than animals.

4. Chloroform requires a carefully graduated admixture of atmospheric air during administration, more than three and one-half per cent. being dangerous, and four per cent. fatal, to man. Most feral animals demand less air than man to attain a satisfactory result.

5. Despite the contrary assertion of the Hyderabad Chloroform Commission, dogs—the domestic variety especially—are more resistant to the vapor of chloroform than human beings; feral canines of different breeds exhibit varying resistance, usually less than domestic dogs that are not surfeited.

6. Cats are less resistant than dogs, and anæsthesia is fatal in ninety-five per cent. of the Angora breed. Among the *Leporidæ* fifty per cent. of the cases of anæsthesia are fatal, and usually from shock inducing *heart rupture*. Ovines also, usually, bear chloroform but illy.

7. Horses, as a rule, if not subjects of amyloid disease, melanosis, or not too obese, usually bear chloroform well. I have, however, had no opportunity to witness the fatal action of this agent on equines.

AZOTURIA.

By C. E. Hadcock, M.D.V.

A Paper read before the Massachusetts Veterinary Medical Association.

Gentlemen: I am inclined to think that azoturia as it appears in the stables of a horse railway company will, as a subject, not be uninteresting to you, because it has seemed to me that there are in one way and another certain facts which

should be considered as a part of the natural history of the disease which, so far as known, have never yet been so given in the books. Besides which, I have certain ideas as to the management and medical treatment of the animals, concerning which I should like to have your opinions and criticisms.

CONDITIONS OF ITS APPEARANCE.

It is said that azoturia always follows a more or less extended period of idleness with full grain feed, and in horses having a blocky conformation; but the circumstances under which it sometimes undoubtedly occurs in my practice leads me to doubt this, as I have witnessed it in horses that have been kept on grain allowances of grain feed while standing idle. In two positive instances horses (they were both mares) that had worked for a long time every day were taken on the road, one completely helpless in all four legs, the other in the two hind extremities only.

There are numerous instances to which horses that have been laid off from regular work, for some reason or other, have still been exercised for as much as two miles a day, then put to work and developed the disease in the usual way.

Cases of undoubted azoturia have been shown me in horses that were absolutely thin in flesh and not of the blocky conformation—which we have been told is an absolutely necessary foundation for an attack. And it is not a particularly uncommon thing to have horses taken as if with spasmodic colic while away from home treated for that, apparently recover, put in their own stall, and two hours afterwards fall completely helpless, sometimes in all four extremities. Even with a clear case of azoturia I desire to be plainly understood to mean, when I say a horse has azoturia, that the diagnosis has been confirmed in each instance by examination of the urine.

The symptoms vary, of course, with the severity of the attack, and to some considerable extent with the habit of the horse. But I must not detain you with any description of them; you are all familiar with them as shown by the horses and as printed in the books.

Of the pathology I do not know that I can say anything that will interest you. I should, however, like to say in this connection, that it is a matter of conviction with me that the helpless condition is a result of tonic spasm of certain of the voluntary muscles, more particularly and ordinarily of those of the gluteal and posterior lumbar regions, but rarely the anterior part of the body or of both these together.

Paralysis, so far as this condition is understood to mean inactivity of the muscles because of pressure upon some part of the cord or brain, in my opinion is not in it. The trouble is in the blood and must be eliminated from it. This office is naturally performed by the kidneys mainly. If the amount of the poison in circulation is not too great for them, the kidneys will strain it out and the animal will recover. If it is too great they will be over-worked, congested or even softened, and the animal will die.

A discussion with you of the treatment of azoturia is the real reason for my having written this paper, for I believe that some of my ways are somewhat different from those usually pursued. Bearing in mind what I have stated to you as being my pathological convictions, my whole aim is to relieve the kidneys as much as possible from the tremendous strain put upon them, and to so preserve them to the vital necessity of the disorder.

In the milder cases I give a ball of eight or ten drachms of aloes, and keep the animal as quiet as possible, with the slings loosely under him, unless he is fretted by them, and generally a good hot blanket over the lumbar region.

In the more severe cases I think it best to insist more firmly upon the slings, and with them my first treatment is to put the animal on his feet and keep him there if it can possibly be done by means of any known method. I then give a ball of ten drachms of aloes (and it should be remembered that these doses are not particularly large ones). The aloes is followed by the administration of sulphate of magnesia in eight ounce doses. In very severe cases the salts are repeated three times in twenty-four hours. They may be given in the drinking water or generally as a drink dissolved in

water. Hot blankets wet with mustard water are packed over the kidneys, and carefully attended to. Urine must be drawn at least twice in twenty-four hours, and if the animal is down he must be turned every six or eight hours regularly from the commencement. I also solicit an action of the bowels by the use every eight hours of an injection of soap-suds or warm water, and one ounce of glycerine added. Let him have all the cold water he wants. Bran mash may be given him to eat, with very little hay to keep him quiet. Stimulants, I think, spirits of nitre, etc., do harm in the first stages, but after two or three days they seem to have a good effect. If given at first they seem to increase the uneasiness. There seems to be no danger from super-purgation. I have never been able to produce it; I have given ten drachms of aloes and two pounds of sulphate of magnesia with scarcely more than a laxative action of the bowels. Fresh air in currents must be supplied in abundance. If the attempt to sling at first be unsuccessful I do not attempt it again for two or three days; the slings to be of the latest pattern, as poor slings do more harm than good.

When the horse is able to stand without the slings they should at first be placed under him at night, as there is some danger that the exertion in rising may cause rupture of blood vessels. This accident occurred in one case that I was interested in, causing the death of an animal that had practically recovered from azoturia.

The results in my practice from this treatment have been very successful, as high as ninety per cent. of the cases treated as described having recovered. In this connection, however, it must be considered that we have intelligent stable foremen who are able to recognize the disease promptly, and also understand its requirements in nearly all cases. The remedies are applied early, the necessary appliances are near at hand, which, of course, helps greatly to lessen the death rate.

As I am a new member of your profession, and this is my first attempt at writing a paper to be read before an Association of professional gentlemen, with years of practical experi-

ence in the treatment of this very disease, I shall hope to be criticised lightly, but to be discussed largely. If it shall be decided that I have been able to offer some suggestions that may help us on a little, I shall feel doubly repaid for all my efforts.

INSPECTION OF THE BRIGHTON ABATTOIR (BOSTON).

By Alexander Burr, M.D.V.

A Paper read before the Massachusetts Veterinary Medical Association.

Mr. President and Gentlemen : Permit me to present to you a short account of my experiences as Inspector at the Brighton abattoir for the Board of Health of the city of Boston since October 1st to April 1st.

In passing, I may say that the Abattoir Company is a corporation who rent sections of their premises to the butchers of Boston for slaughtering purposes. Previous to my appointment, they had been accustomed to a simple mode of inspection, which consisted principally in an examination of the dressed meats. They were, therefore, unprepared for a careful professional examination of the live animals, followed by further inspection during the process of dressing.

The course I have pursued has been to make a tour of the different yards every morning, to gain an idea of the character of the animals, marking such as look suspicious so that they could be identified when dead.

At first, I was regarded by the butchers with more or less, perhaps natural, suspicion, especially when the carcass and viscera showed that anything was abnormal, and a desire was shown on my part that they should remain together.

In justice to the butchers, it must be said that now they do not intentionally buy diseased animals, or handle unclean or unwholesome flesh, but having them they desire to lose as little as is possible.

The rest of my time has been spent in walking through the different houses, observing the animals while being dressed, and afterwards, should any part of the viscera be

accidentally or intentionally disposed of, still another examination is made of the offal when, should anything of a diseased character be found, the carcass to which it belongs is immediately hunted up. I have sometimes found in the rendering house, lungs in an advanced stage of chronic tuberculosis, with abscesses, cheesy matter, grapes, etc. It then becomes my duty to find the animal from which they came. Having examined every carcass, and found one with a number of small grapes (tuberculous nodules) on the costal and diaphragmatic pleuræ which had not been removed, and finding no other carcass having such lesions, one should feel justified in condemning such, even if it looked and weighed well.

During the above time there have been killed 15,506 cattle, calves and sheep, among which there have been 880 cows. Of the above, there have been condemned ten cattle, thirty-one calves and five sheep. Of course, the above does not include animals arriving dead, of which the sheep amount to a large number.

Among the above condemned animals (that of the larger ones) have been found the following diseases, which I shall take the liberty to describe: tuberculosis, five cases; perinephoric abscess, one case; pylo-phlebitis, one case; anthrax, two cases; Texas fever, one case.

In addition to these I shall also describe a few cases of actinomycosis, of which there have been found seven. This lesion, as was at one time thought, is not confined to the facial region, nor is it necessary as an accompanying lesion. Of the three cases with lesions found elsewhere than in the face, one was in the tongue and two in the lungs, one of which was confined to the lung alone.

(*a*) That having lesions in the tongue. On running one's fingers down the lateral surfaces of the tongue it felt distinctly nodular, though not apparent to the eye: on cutting into these nodules they were found to be made of small centres of yellow granular matter, covered with fibrous tissue and the characteristic radiating fungoid growth was fully demonstrated in the usual way.

(*b*) This case presented a small tumor of left superior max-

illa, consisting of small points filled with yellow matter; an examination of the lungs was made, and found the left to contain numerous large abscesses, confined to one lobe, giving it a honeycomb appearance, the space being filled with yellowish puriform matter. This case was interesting from the fact that it might have been taken for a case of tuberculosis where it has gone on to the formation of large abscesses, and it would be sure to mislead one not competent to make a microscopic examination.

No facial lesions were found in this case, but in one lung there was a dense nodule made up mostly of fat, in center of which was a calcified mass of the fungoid growth; it had a contracted appearance, and was, in all probability, an arrested stage of the disease, in which calcification had set in. This, perhaps, may be looked upon as being an unusual result of the disease under consideration; but in this instance, at any rate, the diagnosis is as certain as this form of termination is rare.

Second on the list of diseases is pylo-phlebitis. This is quite a frequent trouble, all but two cases consisting of a few small abscesses, in which case simply the liver has been condemned. The following is a description of the above mentioned two cases.

(*a*) The liver contained a large abscess which had worked its way forward through the diaphragm and into the right lung, resembling a thick rubber tube, having a large abscess on either end, dumb-bell shape, the spheres of which were lodged in the lung on one end, and the liver and spleen on the other. Microscopic examination of the pus showed nothing but simply micrococci.

(*b*) This case was what might be called general purulent pylo-phlebitis. The liver was much enlarged, weighing twenty-six pounds, and one mass of miliary abscesses; rest of organs all normal; animal was quite emaciated, weighing only four hundred and thirty pounds. The above was condemned.

Third on the list of diseases is Texas fever. Three cases of this disease have arrived on the grounds, two of which were dead and at once sent to the dead house.

The third case was that of an animal which had been shot at the Watertown Stock Yards, and carted into the slaughter house to be dressed; there was a question in my mind whether the animal was not dead, or almost so, before shooting. On cutting down the median line of the abdomen, the omentum covering the rumen was exposed, and was of a dirty gray color, and smelling badly, arousing my suspicions at once. The liver was secured, which was enlarged and yellowish; spleen appeared normal. Feeling justified in my diagnosis, the animal was condemned and at once sent to the dead house. The small number of cases of this disease is probably to be accounted for from the fact of it being the season in which Texas fever is not prevalent.

The fourth on the list of diseases is anthrax. Five cases of this most dreaded disease have arrived on the grounds, three of which died, and two were shot at the stock-yards and brought here with the intention of dressing them for meat. The first of these I will describe. An order came for the abattoir ambulance to go to Watertown for a steer which had been shot; it was ordered to be sent into one of the houses; knowing nothing of the case previously, I reached the house as they were cutting down through the median line of abdomen, exposing the omentum to view, which was almost black in color and had a very disagreeable gaseous odor, putrefaction having already set in, although the animal was supposed to have been dead less than half at hour. My suspicions were at once aroused; from the rapid decomposition and my having had three cases two weeks previously, I was somewhat on my guard for anthrax, and after further convincing myself, I ordered the animal sent to the dead house; the floors were then cleaned, and necessary precautions taken before dressing any more on the same spot. On post mortem examination, no marked lesions of an anthracoid nature were found, although in the form which I take to have been apoplectic, one would not expect to find any marked lesions. However, feeling sure of my diagnosis, scrapings were taken from the spleen and examined microscopically for the bacillus anthracis, with positive results, the rods having

begun to form spores from exposure to the air; this left no doubt as to the diagnosis. This carcass was ordered, along with hide, to be at once placed in a closed rendering tank and subjected to a prolonged cooking under a pressure of fifty pounds steam, which means a temperature of 300° F.

The fifth and last on list of diseases is tuberculosis. The detection and detention of such cases of tuberculosis as would seem unfit for consumption has been a part of my work in which I have taken much interest, and rigidly examined all cows slaughtered here, as the disease is most prevalent among them. Up to date, April 1st, twenty-nine cases have been discovered, showing lesion all the way from a mere nodule to the most advanced stage. Twenty-eight of the above number were cows, the twenty-ninth being a Northern ox; of these five only have been condemned; this means that these five had considerable thoracic and in some cases abdominal lesions.

On account of the differences of opinion as to the danger of contracting the disease from eating the flesh of those killed during its early stage, and where they have shown only trifling lesions, I have condemned only such as seemed to be the worst. Perhaps it had better be said right here, that the surrounding towns have no system of inspection.

Although my examinations show a considerable percentage of tuberculosis among our Eastern cows coming here, I am convinced that the disease does not prevail to anything like the extent that some of our members have reported, and possibly honestly, suspect. Below are a few statistics gathered at the abattoir.

There have arrived 880 cows, of which seventy were Western, leaving 810 Eastern. Of these 880, twenty-eight were found to have lesions of tuberculosis; of the seventy Western cows not one case was found; the percentage will read as follows:

Number of animals (cows and steers) killed	15,506
Percentage of Tuberculosis - - - -	.17
Of the 880 cows Eastern and Western -	3.30
Of the 810 Eastern only - - -	3.60
Of the 70 Western only - - - -	0.00

Of the twenty-nine cases discovered, there was not one among them but what showed some pulmonary lesion. I do not wish to be understood as thinking there is no such thing as localized tuberculosis; this has been demonstrated by inoculation, but from my experience it would seem that invasion most frequently takes place through the respiratory passage.

Of course, we must take into consideration that the cows coming here are generally thought to be sound, that is we do not get all the animals used in the cheaper grades of beef; thus it will be seen that the above statistics are not the actual statistics of the State; still, I think a fair average of abattoir statistics. An acquaintance with the subject of inspection, as reported in the current professional journals of the day, will convince any one unprejudiced that we are better off than any European country reported. That is, the percentage of tuberculosis among our animals is less than in any European country. The number of animals killed outside the abattoir can only be a very small number compared with the other, and it would be unfair to think that all such are diseased, or even one-fourth of them.

So far as can be judged from my short period of inspection even among our Eastern cattle, tuberculosis exists to a much less extent than among animals in the populous centers of most European countries, and among our Western bullocks, tuberculosis has almost no existence whatever, and this class of animals represent two-thirds of our cattle population.

I may add in connection with the foregoing, that in relation with the abattoir we have an establishment where fertilizers are manufactured, and dead animals of all kinds are received, such as horses and cattle, many of which are cows; these animals represent a fair average of the cows of our neighborhood; having died, the owners have seldom any disposition to hide them. I have examined all the cattle brought here and so far my record is as follows:

Received dead cows at abattoir from Oct. 1, '89, till April 1, '90	80
Number found with tuberculous lesions	6
Percentage	7.5

No better opportunity, it seems to me, could be found to reach a fair average of the extent to which the disease prevails among our animals.

ANTIFEBRIN OR ACETANILID.

By G. G. Ferling, V.S., Richmond, Ind.

A Paper read at the joint meeting of the Indiana and Illinois Veterinary Medical Associations.

The list of antipyretics has been increased by the discovery of antifebrile properties, which are derived from aneline. The discoverers, Drs. H. Cahn and P. Hepp, for convenience named it antifebrin. It is reported to possess four times stronger antipyretic power than antipyrin. Antifebrin or acetanilid, as its name indicates, means acetic and aniline, and is prepared by heating aniline and glacial acetic acid in a flask provided with an upright condenser for forty-eight hours and then distilling.

Where acetanilid is obtained in an impure state, it then may be purified by crystalization from benzol, or boiling water. Acetanilid when pure is a white crystalized powder without odor, imparting a slight burning sensation to the tongue and melting at 101 degrees. It is soluble in 189 parts of cold water at 6. 42–8 F. and more readily soluble in ether and alcohol. From its alcoholic solutions it is not precipitated by water. It is also soluble in oils and benzine.

Antifebrin is a neutral substance, not acted upon by sulphuric or hydrochloric acid, having neither basic or acid properties. There can be no salts of which it may form a part; as in the case of most of the recent antipyretics.

ACTIONS AND USES.

It has a depressing action on the heart, and has to be watched, because it is liable to do some harm. I believe I had one case where it had such a depressing action on the heart that I followed up with stimulants and *digitalis*.

It is eliminated by the kidneys. Windriner states that it is not found in the urine, as antifebrin or aniline, but con

siderable phenol was detected. Its action is slow, generally lasting about four or five hours, lowering the temperature in some cases from two to three degrees. Generally it leaves no bad effect. Some writers combine it with stimulants, claiming it does not act so harshly on the heart, but I see it is freely discussed as to what stimulant should be used; using spirits of ether with it, I see the *Druggists' Circular* claims it is liable to form another chemical, as yet unknown, but I have used it along with alcohol and whiskey. In some cases of influenza and distemper, where there is a difficulty in swallowing, I combine it with simple syrup and syrup of wild cherry bark.

Being there was, and still is, a great amount of catarrhal fever and influenza, I commenced using it freely this spring, and think I have had excellent results. In fourteen cases of influenza that I treated for I. H.Gaars at his stock farm, Lewesville, Md., amongst some of the brood mares there was a filly by Onward, also the three-year-old stallion Gambyion, two-year-old record of 2:40¾; it was used with good success. In seven cases of influenza that I treated for Harman Shofer, a horse dealer in Richmond, Indiana, amongst which was one case where the temperature ran up to 107¼°, I began on four dram doses every four hours, and by the time the second dose had acted—that is meaning three hours later—I found the temperature down to 104°. Kept up all that night, and next morning the temperature was 102¼°; kept it up all that day and stopped that evening, when again the next morning the temperature was 104°. I then gave another four dram pill, followed up in an hour with some aconite, and in three hours the temperature was then 102°. I then stopped giving acetanilid that evening. I was then called to the country, and when I came back one of the hands came over and said that the horse had the colic and was rolling and tumbling. I went to see him, and found him in pain; gave hypodermic injection of four grains of morphia, injection of water with a couple of ounces of glycerine, and in about twenty minutes he rose up and went to eating, and kept improving. After three more days I discharged him.

In a case of pneumonia, the horse Geo. Hays, a three-year-

old pacer, with a trial of 2:20, then belonging to S. Railslads, of Indianapolis and kept at Centerville, Ind., the temperature was up to 104½°. I gave acetanilid, about three per day for a few days, giving digilatis along; followed up with muriati amn, whiskey and glycerine. He was sick twenty days, improved nicely and the driver, John Voss, was to see me Saturday, saying he went a mile in 2:29½, so it left him in good shape.

In three cases of rheumatism I used it in four and five dram doses; found it lowered the temperature, and seemed to act as an anodyne, and after three or four days the patient was better, and able to walk and stand, as they all kept lying most of the time. In a number of cases of strangles I used it, and in one case of laminitis, when the temperature was up to 104°, I used it with giving aloes and applying a cold applica tiou to the feet. Externally I use it by sprinkling on old unhealthy sores, when they generally improve and do nicely, as it seems to form a kind of coating over them.

In fact I could state many more cases where I used it, and think it is a great reducer of temperature, which surely must make the patient feel some relief.

PNEUMONIA.

By G. W. Buckner, D.V.S., Rockville, Ind.

A Paper read at the joint meeting of the Indiana and Illiuois Medical Veterinary Societies.

Mr. President and Gentlemen:—Pneumonia is an acute febrile disease, characterized by inflammatory consolidation of some portion of one or both lungs.

It is true, in a sense, that pneumonia and inflammation of the lungs are synonymous terms, but the latter expression by no means covers the whole pathology of the disease; indeed, a careful examination of the etiology and clinical features of pneumonia would suggest its being placed in our nosology amongst such diseases as acute rheumatism, influenza, etc., the inflammatory pneumonia in each of these diseases being

but the local expression of a general state, and only exceptionally proceeding beyond hyperamia and simple exudation.

ETIOLOGY.

Individual Predisposition. No age is exempt from pneumonia, but the disease is most common during the active stage of life. Depressed vitality, overcrowding in bad, ill ventilated stables, renders the patient more prone to its attack. A plethoric state also favors attack. Cold seasons, great variation of temperature, rough, cold winds bring about pneumonia and account for its epidemic form. An epidemic of influenza is most likely to be followed by pneumonia.

Pathologists also state that the bacilli pneumonocci is a most fruitful cause, but as this theory has not been substantiated as being *the* cause, I will just say that it is a point worthy of investigation.

Pathology and Morbid Anatomy.—The morbid anatomy of pneumonia consists of an acute hypermia of the affected lung, resulting in an exudation into the alveoli and forming a film upon the pleural surface. This film coagulates and fixes the lung in an immovable state of expansion or hepatization. Here all the severity of the disease is manifested, and with its attainment the disease proper is at an end.

The local consequences of the disease do not thus terminate, however, with the first consequences of extravenous influence. Coagulation of the exuded product, a chain of secondary phenomena commences, partly chemical and partly vital, attending their liquifaction and reabsorption. Thus, after a usually very short time the malady is ushered in abruptly with rigors, rapidly mounting and maintaining high temperature. In the second to fifth day the local signs present themselves. On the seventh to the tenth day the temperature usually falls, but the local lesions have yet to be removed. Pneumonia is thus artificially divided into three stages:

The first stage begins with the rigors and ends with the appearance of definite signs of consolidation. It may be termed the stage of initial fever with pulmonary engorgement. If death should occur at this stage, the affected lung is found

to be in a condition of inflammatory œdema, heavy pitting on pressure and crepitating when cut.

The second stage is that of pulmonary hepatization or red hepatization. The affected portion is bulky, heavy, solid to feel. On section the lung is firm and dry, presenting a red granular surface which is readily broken and sinks in water.

Third stage is that of resolution or gray hepatization. This is marked by falling of temperature. The exuded product now rapidly undergoes molecular degeneration, the fibrinous element becoming completely emulsified, and the corpuscles more or less broken down by fatty changes.

Termination.—Resolution is a most favorable and common termination. Abscess, gangrene and chronic pneumonia may arise.

Symptoms.—The general aspect and symptoms of pneumonia on the third or fourth day of attack are usually such as to leave but little room for doubt at to the nature of the case. But in the early stage I have been frequently at a loss to know if it was going to be a case of pneumonia or pleurisy, a point of much importance from a therapeutic standpoint.

The disease is usually ushered in with a chill, staring coat, anxious expression, febrile symptoms, cold extremities. Thirsty as a rule, patient retains standing posture, legs separated as if to give room for lungs to expand. Temperature ranging from 104° to 106°. Pulse accelerated and very variable, numbering from 70 to 90. The artery is hard and full or may be soft and full, owing to plethoric condition of patient. Mucous membrane congested. Appetite and secretions diminished.

Physical Signs.—Dullness on percussion over hepatized portion and a loss of respiratory murmur. Just before hepatization sets in you get the crepitant rales. In the second stage bronchial breathing, which is very characteristic. In the third stage the bronchial breathing gives place to crepitations of a moist, coarse character. Pleural friction is heard if complicated with pleurisy, which I think is in most cases.

Treatment.—Pneumonia being a self-limiting disease, the only form of treatment indicated is to try and assist nature

and treat the symptoms as they arise. In the first stage I find great good in vesication, cantharides blister over region of chest. It has a tendency to abort the lesions and protect your patient from pleurisy.

Support the patient's strength with stimulants and tonics, say alcohol and quinine, or ammon. carb., gum camphor, gentian, ginger made into a ball with simple syrup. Equalize the circulation by blanketing; bandage the legs; allow a liberal supply of fresh water containing some nitrate of potash; a well ventilated, roomy box stall; good nutritious food of a laxative nature, is the usual treatment for an ordinary case of pneumonia. In some cases during convalescence, the heart is weak and irregular; the patient should get heart stimulants, say digitalis, for in those cases there is a tendency to heart clot.

While some cases do well on stimulants, others would do better on sedatives. This can only be governed by the symptoms of the different cases. If there is a disease in the equine species that should be treated individually more than another, it is pneumonia.

Thanking you for your kind attention, I will now submit my remarks to your criticism.

VETERINARY HYGIOLOGY AND ANTISEPTICS.

By Thomas M. Buckley, D.V.S., Brooklyn, N. Y.

A Paper read before the Long Island Veterinary Society.

Mr. President and Members:—Being accorded the privilege and pleasure of reading before the Society this evening a paper on Veterinary Hygiology and Antiseptics, which, to say the least, can be but an apology, as it is by far too great and important a subject to attempt to do anything like justice to on such a occasion as this. But increasing observation satisfies me that there remains a vast amount for us as veterinarians to accomplish in order to carry out hygienic conditions.

Good quarantine laws should be enforced wherever and whenever an outbreak is discovered, and the present Bureau

of Animal Industry and its efficient officers deserve all praise for the noble work they are quietly but surely accomplishing by stamping out, thereby protecting this great nation, from contagious pleuro-pneumonia and tuberculosis, which comes on insidiously and frequently makes considerable progress before it is observed and the necessity for recognizing the existence of them was never greater than the present day.

The illimitable demand for animal food by rich and poor is perhaps in no part of the world greater than in the United States, and when we take into consideration the variety of diseases which are transmitted to man from the animal kingdom—one especially, *tuberculosis*, not only may it be transmitted to man but to any species of animal that partakes of raw flesh in which is contained tuberculous matter—and when we take into consideration the vast amount of milk that forms the principal daily article of diet for the infant and invalid, whose condition and low resisting powers renders them especially susceptible to absorption from milk thus contaminated, it is no wonder our mortality by tuberculosis is so great as statistics show for the city of Brooklyn:

From	January	1st	to	December	31st,	1880—1736.
"	"	"	"	"	"	1881—1754.
"	"	"	"	"	"	1882—1806.
"	"	"	"	"	"	1883—1847.
"	"	"	"	"	"	1884—1913.
"	"	"	"	"	"	1885—1995.
"	"	"	"	"	"	1886—2085.
"	"	"	"	"	"	1887—2026.
"	"	"	"	"	"	1888—2051.
"	"	"	"	"	"	1889—2055.
"	"	"	"	June	7th,	1890—1018.
						20,286

I firmly believe that this great mortality can be influenced by the co-operation of the veterinary profession in reporting any suspicious case to the inspector of his district, thereby aiding the Bureau, whose staff is entirely inadequate for the amount of territory to be covered.

STABLE HYGIENE.

Under which head I will briefly enumerate a few essential points. They should be spacious, well ventilated, lightsome, thorough drainage and free from dampness; no bedding or manure should be permitted to remain in the stall in the daytime, and unless absolutely unavoidable, should a sick animal be treated in cellar stables. Stables should be lime washed at least four times a year and flooring washed down weekly during the summer months with one of the standard disinfecting solutions, as organic impurities usually exist in the air at all times in the form of bacteria, but especially more so where the air is loaded with impurities resulting from decomposition, and I believe that the majority of the ultimate results of our surgical cases would be far more successful if we adopted a rigid antiseptic system, for this is truly an antiseptic age, and as veterinarians, the sooner we adopt such principals the better will we be able to combat successfully operations that now frequently fail to terminate as favorably as we desire, for it is well established by this time in human practice that one of the most important factors mentioned as having of late years influenced the results after gastrotomy, enterotomy and ovariotomy, is the application of the antiseptic treatment before, during and after the operation, and there remains no reason why we should fail to advocate the strictest antiseptic precaution, which we are morally and legally bound to respect in justice to our dumb brute creation, the public and our profession, for we are well assured, by their use peritonitis and pyæmia is extensively averted.

We are familiar with the occasional results of puncturing in tympanitis, likewise from use of the hypodermatics, which may be attributed to the septic condition of instruments, which it may not be out of place at this time to mention a few antiseptic agents that are easily obtained and the majority of them being inexpensive; carbolic acid, biniodide of mercury, bi-chloride of mercury, iodoform, boracic acid, chloral hydrate, peroxide of hydrogen, creolin, and to summarize briefly we may divide the antiseptic method into four (4) divisions:

1st. Preparation of the animal.
2d. " " " operating room.
3d. " " " instruments.
4th. " " " surgeon.

By strict adherence of the surgeon to aseptic principles, his painstaking and labor will not be in vain, for I cannot impress too deeply that the secret of success is in proportion to the extent of our hygienic conditions and surroundings.

CLINICAL DEPARTMENT.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."—VETERINARY RECORD.

OMENTUM HERNIA IN A YEARLING COLT.

By J. S. CULBERT, V.S., Portland, Ind.

I was called on May 4th to see a yearling colt which had been castrated on May 3d. When I arrived at the farm I found the colt in a lot walking around very uneasily, with the omentum protruding through the cut in the scrotum on the off side; it hung down so far that it touched the ground as he walked. I found the pulse increased to 85; temperature 102⅘°; respirations accelerated; colt in rather a stupid condition. The first thing done after my examination was to cast the colt; the omentum was one mass of coagulated blood and serum. I examined the scrotum by introducing my finger up into the inguinal canal and into the opening in the peritoneum. Line of treatment: I took an ecraseur and severed the protruded omentum as close to the scrotum as possible; then I washed and cleansed the parts well with a bi-chloride solution, one to five hundred; then I crowded omentum back into abdominal cavity; then a plug of oakum, well saturated with the bi-chloride solution, was crowded up into the canal against the opening in the peritoneum and left there for twenty-four hours; then took it out. I gave it bran mashes and enemas of warm water two and three times

a day; I put it on a sedative of four drops of aconite every three hours, and kept the colt from lying down for the first forty-eight hours. The colt made a good recovery and seems as sound and as hearty as ever.

EPILEPTIC FITS IN A HORSE.

By R. W. Ellis, D.V.S.

On June 20th I was called to see a roan horse fifteen years old, said to be suffering with colic. When I arrived I could discover no symptoms of colic and got the following history:

"Night before last he was taken with colic and I gave him a colic mixture that the druggist keeps, but he was quite a while before he got quiet. He would shake all over when he was down, but after a while he suddenly became quiet and got up all right, and I left him. He went to work yesterday, but this morning he laid down and "shook" again, so we left him in."

That is the history as I got it. I then took his temperature which was 102° F., pulse about normal, and otherwise apparently all right. The attendant informed me that he defecated and micturated in a natural manner and as far as he could discern the quantity and consistency of the excrement was about normal, but that he did not eat well, so I prescribed a tonic and left him, saying I would call again next morning, thinking that whatever it was that was lurking in his system would develop itself by that time. But that evening about seven o'clock one of the attendants came to me very much excited and stated that the horse was worse, and was having "fits."

I hurried to the place, and the *second* time found the horse standing, apparently all right. In a few minutes, however, he began to evince signs of restlessness and the attendant said: "Now, doctor, that's the way he did before the other "fit." In a moment later he went down very suddenly, and had spasm after spasm, in rapid succession, during which all his muscles became rigid and tense, even to the posterior rectus of the ball of the eye, causing the membrana nictitans to

dash across the eye as in tetanus, then the eyeballs would roll and had a peculiar vacant stare. There was also a spasmodic contraction of the auricular muscles, causing convulsive movements of the ears. This condition lasted from eight to ten minutes, when it suddenly ceased, and the animal raised his head and looked up as though nothing had happened, and a few minutes later got up and urinated naturally.

In about twenty minutes there was a repetition of the above symptoms, lasting about the same length of time; on the cessation of which I administered (per month) chloral hydrate one and one-half ounces and lobelia two drachms (dry) in two gelatine capsules. This was given about eight o'clock and about ten o'clock he had another fit of convulsions, but this time very light and lasting but a short time, soon after which he went into a somnolent condition and seemed comfortable, so I left him for the night. The next morning he seemed rather dull and did not care to eat much (temperature 101° F., pulse normal) so I ordered the continuation of the tonic I had prescribed the day previous. This was done and the horse regained a good appetite; in fact, at the end of twenty-four hours he was quite ravenous. He improved steadily in strength and energy and in a few days resumed his accustomed work—which is drawing a street sprinkling wagon with another horse—and has had no further trouble up to date.

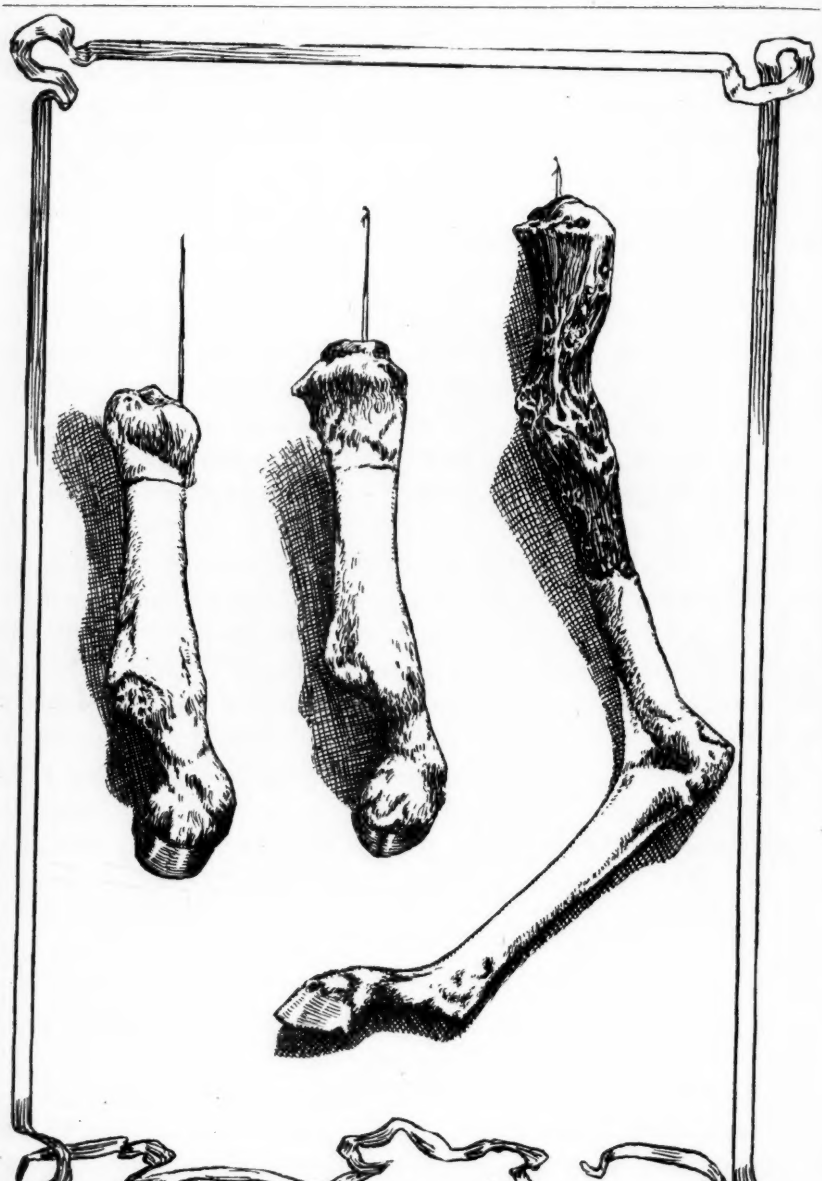
PECULIAR DISTOKIA IN A MARE.

By C. H. Peabody, D.V.S., Providence, R. I.

I was called to see a mare in difficult labor about 6 p.m. and found a large animal in pains.

History.—She commenced to have pains in the morning and the owner supposed she would come all right. On examination found it to be a thigh and croup presentation and with the fœtus on its right side.

Mode of Operation.—Tried to push the fœtus forward, to get a cord around its hind extremities, but could not. Found the extremities immovable. In trying to flex them they were as bone and could not be moved. Taking a hooked knife, I cut over the tibial articulation, got a cord around the



hock and with some pulling and cutting got the lower third of the extremity out, then the tibia and femur.

I then cut into the abdominal cavity and emptied it of its contents. Making another opening through the posterior open-

ing of the pelvis, passed a cord through that and brought it out and with a hook in the back and two good men pulling tried to relieve the mare, but could not.

Then I tried to get the other hind extremity but could not move it at all. I then cut down on the point of the ischium and passed a cord over it. With good strong pulling I separated it from the sacrum through the symphisis pubis. Then cutting down over the coxo-femoral articulation, passing a cord around the remaining portion of the pelvis and keeping a strong pulling on it, I succeeding in cutting and tearing it off at the lumbar vertebra, leaving the nigh hind extremity attached to the muscular tissue.

Then getting a cord over the head of the femur, by pulling and cutting I separated the muscles and removed the extremity.

Then the difficulty was explained. The joints were completely anchylosed. This explained why it was impossible to move the legs. I examined the leg I had first removed and found it in the same condition. After cutting the ribs and shutting them together I removed the rest of the fœtus quite easily and found that the forward extremities were deformed.

Gave the mare ℥iv whiskey and ℥ii tinc. opii, clothed her warmly and removed her to a dry stall. Next day her temperature was 301°, pulse 60, respiration 18. I gave ʒi quinine and ℥ii whiskey every two hours.

The mare continued to improve and is now turned out to pasture.

CHAS. H. PEABODY.

N. B.—The cut shown herewith gives a good illustration of the extremities. The one on the right is the nigh hind leg, that was removed whole from the pelvis. The ones on the left are the forward extremities from the carpus.

C. H. P.

LARYNGEAL PARALYSIS OPERATION.

By THE SAME.

There was brought to my stable a bay horse seven years old, weighing about twelve hundred pounds.

Performed tracheotomy and he wore a tube until Feb. 2d,

when it was removed and the opening allowed to close and became thoroughly healed before operating.

On the 3d of March, the horse being prepared, he was cast and given a mixture of two ounces each of ether and chloroform and in three minutes he was ready for operation. On being turned on his back the directions recommended in Fleming's work were followed generally and in twenty minutes the horse was ready to get up. In twenty minutes more he had recovered from the effects of the anæsthetic and got up all right and was walked into a stall.

On March 4th, the temperature was 102°, pulse 50; March 5th, temperature 103°, pulse 52. I washed the wound and gave three quarts of oatmeal gruel per rectum. He looked bright, and there was some smell from the wound.

March 6th, temperature 102° pulse 48. He looked well and was given two quarts of water, which he drank well. There was but little discharge through wound, which was not much swollen and discharged but little.

On the 7th of March the temperature 101°, pulse 40. He drank three quarts of water in the morning and two quarts of bran mash at night. His wound looked well, with but little discharge.

March 8th, his temperature was 100°, his pulse 38. He drank three quarts of gruel and had no discharge through the wound. It was dressed with a solution of permanganate of potash, and had some smell. At night he was given one quart of steamed oats and two quarts of bran mixed in a soft gruel.

March 9th, temperature 100°, pulse 30. He looked well, the wound was closing and discharged but little. He was fed four quarts of steamed oats and bran and given about one-half pound of steamed hay in the morning. Water as required. At night he was fed three quarts of oats and bran steamed and one-half pound of steamed hay. He ate well and had no discharge through the wound.

On March 10th his wound looked well. He looked bright and ate and drank easily, and but little ran through either the wound or the nose.

March 11th and 12th he was the same as on the 10th, his wound continuing to heal well. The horse was discharged from the hospital.

April 4th, he made some noise but works well without a tube, but there is some roaring still.

CASE NO. 2.—On February 25th was brought to my hospital a brown thoroughbred stallion. He was operated on in the same way as the above, and the same treatment was pusued in a general way. This animal was a confirmed roarer and was bought in Kentucky as a roarer. When brought to me he would roar when being trotted by the halter and if ridden at a trot or gallop would fall down.

He was discharged from my hospital May 7th and on May 9th the owner commenced to ride him and he has been used every day since. He trots and gallops at full speed with a man of 160 pounds weight and the noise is so slight that it cannot be heard at a distance of fifty yards, and is growing less every day, so the owner says.

TEMPORAL DENTAL CYST.

By WM. R. CLAUSEN, V.S., Waupaca, Wis.

A one-year-old colt with a running sore, of about two months' standing, at the anterior part of the base of the ear, was brought to me for treatment. Below the ear was noticed a small, hard, slightly movable tumor, and on introducing the probe, a bony substance was struck. The tumor was carefully dissected out, but on reaching the base, which was smaller than the top, it was found to be attached to the zygomatic process at the squamosal bone. A little effort dislodged it and it presented, besides the protuberance by which it adhered, another, perfectly smooth.

The sides were covered with a calcareous layer, which could easily be removed by the finger nail. The fore portion or top was smooth, but marked by a groove about one-eighth of an inch deep, giving it the appearance of an imperfectly formed molar, about the size of a large hickory nut.

Mr. Dahlstrom, a student of mine, removed a similar

tumor, situated at about the same place, from a ten-year-old horse, that had suffered for eight years and for some years would not allow a bridle to be put on his head. This was a nearly perfectly shaped molar with a blackened appearance.

SOCIETY MEETINGS.

LONG ISLAND VETERINARY SOCIETY.

A regular meeting of the Long Island Veterinary Society was held on June 18th, 1890, at No. 74 Adams Street, the President, Dr. George H. Berns, in the Chair.

The following members were present: Drs. Berns, Bowers, Newman, Buckley, Breslin, Housman and Pendry.

The minutes of the previous meeting were read and approved.

The Board of Censors made no report.

The Committee on State Legislation reported progress.

The next order of business being the reading of papers, Dr. Thomas M. Buckley read an interesting paper entitled, "Veterinary Hygiology and Antiseptics."

Quite a discussion followed the reading of the paper, after which a vote of thanks was tendered to the essayist.

A communication from Dr. E. Hanshew, Jr., was read, in which he tendered his resignation as a member of the society.

The communication was received and the resignation accepted, and the Secretary was instructed to notify Dr. Hanshew of its acceptance.

It was moved by Dr. Pendry and seconded by Dr. Bowers, that hereafter essayists should furnish duplicate copies of their paper.

Dr. George H. Berns was appointed essayist for the next meeting.

The meeting then adjourned, the society to meet again on the third Wednesday in September.

D. S. Breslin, D.V.S., *Secretary.*

MASSACHUSETTS VETERINARY ASSOCIATION.

The regular meeting of the Massachusetts Veterinary Association was held at No. 19 Boylston Place, Boston, June 25th, 1890.

The President and Vice-Presidents being absent, Dr. W. Bryden was elected chairman for the evening.

The members present were: Drs. W. Bryden, L. H. Howard, A. Marshall, W. Peterson, J. M. Skally and C. Winslow.

The essayists present were: Drs. Hadcock and Burr.

Honorary member, Dr. J. H. Stickney.

The question of Dr. K. Winslow's resignation was considered again. After

a good deal of discussion Dr. Peterson moved that if said Dr. Winslow still be in arrears at the next meeting he be expelled, the Secretary to notify him at once. Motion seconded by Dr. Marshall. Carried.

Dr. Hadcock then read a paper upon azoturia.

The following discussion ensued:

Dr. Howard agreed with the essayist that a horse need not be even plethoric or lying idle in order to have azoturia, and cited an instance in his practice of a mare then in flesh working on a coal cart, taken while at work, without having previously laid off.

Dr. Winslow said that his cases had all been of the usual character.

Dr. Skally had never had a case in a mare in his practice.

Dr. Peterson agreed with the essayist, that horses can be taken with azoturia while working, wtthout having any previous state of idleness.

Dr. Marshall has generally seen this disease in horses in good condition after a few days rest.

Dr. Marshall then asked the essayist if the atrophy of the muscles in the anterior crural region, so often seen as a result of azoturia, generally recorded? Dr. Hadcock said in his experience yes.

Dr. Stickney said his experiences had been with horses in good flesh. He then gave an instance of a mare having symptoms simulating those of azoturia, but she was advanced in pregnancy and finally foaled in the slings, afterwards making a good recovery. She had the same trouble in two subsequent pregnancies, and both times foaled in slings. Pregnant women often have trouble with their kidneys, and is it not possible that mares may have a similar disturbance? He also spoke of the conformation of a horse being deceitful often in judging of the condition; an angular, loosely coupled horse may be in better flesh than a compact, round turned one, and yet his appearance may be the reverse.

Dr. Bryden then spoke of the treatment of cases of azoturia. In his opinion, the medicinal treatment was of less importance than the mechanical management, such as slinging, or, if the animal was unable to rise, the turning over frequently, and general attention to his comfort.

Dr. Marshall then moved that the Association tender Dr. Hadcock a vote of thanks for his paper, and that he be elected a member. Seconded by Dr. Winslow, and carried unanimously.

Dr. Alexander Burr then read an account of his experiences as meat inspector for the Boston Board of Health at the Brighton abattoir. The following discussion ensued:

Dr. Howard stated that his personal experience with cattle was very limited, but hoped that Dr. Burr was right in his small estimation of the amount of bovine tuberculosis in the locality; he was afraid, however, that it existed to a greater extent than the essayist judged it to, from what some of our other practitioners say, in whom he has every reason to feel confidence.

Dr. Winslow's experience with tuberculosis was so limited that he had nothing to say upon it.

Dr. Peterson thinks that a good many animals that are tuberculous are not sent to the abattoir; doubted if fifty per cent. of the creatures with the disease were sent to the abattoir. He then told of a slaughter house out in the country,

not a great way from Boston, which he happened to visit one day, and where he saw "strange sights."

Dr. Marshall said he thought there was less tuberculosis around Eastern Massachusetts than many of our members would have us believe.

Dr. Stickney said he had but little cow practice, but he had seen a good deal of bovine tuberculosis. He thought that Dr. Burr's statistics were not very valuable towards showing the prevalence of the disease around here, as the beef he inspects comes chiefly from the West. Dr. Burr's statistics are only correct as far as the animals brought to the Brighton abattoir are concerned, but do not prove a great deal beyond that. It is not to be wondered at that tuberculosis should exist in many of our well-bred dairy herds, as it has been carefully propagated there for years.

Dr. Marshall then moved that the essayist be given a vote of thanks for his paper, and be elected a member of this Association. Seconded by Dr. Howard, and carried unanimously.

Meeting then adjourned.

AUSTIN PETERS, *Secretary.*

JOINT MEETING OF THE INDIANA AND ILLINOIS VETERINARY MEDICAL ASSOCIATIONS.

(*Continued from page* 211).

The morning of the 5th was spent in an enjoyable and profitable manner by visiting some of the largest stock farms in the vicinity of the city.

In the evening at 8 P.M. the meeting was called to order, and Dr. Ferling read his paper on antefebrin or acetanilid.

In the discussion following Dr. Bell mentioned that he had used the drug in much larger doses, six drachm doses three times daily.

Dr. Williams had used it advantageously in pink eye, giving one ounce as a dose every twelve hours. This generally reduced the temperature before twenty-four hours. Could only recall one case of heart complication, and had used it in connection with nitrous ether, giving the latter in one ounce doses every three hours. Has found acetanilid to control action of heart rather than interfere with it.

Dr. Knowles: Does the drug cut the course of pink eye short? The essayist thought not. Dr. Williams thought it did, but was not prepared to say that it actually did.

Dr. Bell: How does antefebrin reduce temperature? The essayist said by its action on heart, while Dr. Bell thought it was more likely due to some power it possessed of destroying the fever-producing microbe.

In answer to a question by Dr. Curphey, the essayist said that half ounce doses acted something like morphine in giving ease to the patient.

Dr. Knowles enquired of essayist if he had ever tried good nursing and no medication in cases where temperature was high? No.

Dr. Knowles mentioned a case of single pneumonia where temperature was 108°. He gave three one ounce doses of the drug without any change. He stopped giving medicine and patient improved.

Dr. Buckner then read his essay on pneumonia.

In discussion of Dr. Buckner's paper, Dr. Knowles enquired if essayist thought there was much use in medicating. No; more could be done by giving patient good hygienic surroundings.

Dr. Bell: Does quinine, antepyrin, etc., help in treatment of this disease? Yes, by stimulating.

Dr. Gustmeyer, M.D., one of Terre Haute's ablest physicians, mentioned some cases of pneumonia in the horse which he had seen some years ago. How, while kept in a stable where disease had been contracted, numbers died, but on being removed to a field where good air was obtainable, all that were then afflicted recovered.

Dr. Thompson moved a vote of thanks to Drs. Paquin and Williams. Carried unanimously.

Dr. Williams, being connected with the AMERICAN VETERINARY REVIEW, made an appeal for the complete papers read before the Indiana Association, in return for which the REVIEW would give the Association reprints of their meetings at a nominal price.

Moved by Dr. Macaulay, seconded by Dr. Buckner, that Dr. Williams' proposition be accepted. Carried.

Following this was the naming of the essayists for the next meeting, and because of the United States Veterinary Association having its meeting in Chicago next September it was moved by Dr. Thompson, seconded by Dr. Ferling, that the next meeting of the Indiana Association be held in Indianapolis on the first Wednesday in January next.

Moved by Dr. Buckner, seconded by Dr. Bell, that the next meeting be commenced on Wednesday night and continued on Thursday morning and evening.

Moved by Dr. Mylne, seconded by Dr. Driggs, that a vote of thanks be accorded Drs. Knowles and Thompson for their courtesy on Thursday morning. Carried.

On motion of Dr. Macaulay the meeting adjourned.

H. R. MACAULAY, *Secretary.*

OHIO VETERINARY MEDICAL ASSOCIATION.

The seventh semi-annual meeting of the Ohio Veterinary Medical Association was held in the Council Chamber of Dayton, Ohio, on July 16th at 8 P. M.

The President, Dr. J. W. Butler, opened the meeting with a brief address and said he regretted to see such a small attendance, which, however, might be partially attributed to the excessively hot weather.

The minutes of the last meeting after being read were amended and adopted.

The Secretary presented the correspondence to the meeting and it was found that some of the members whose addresses had been sent to the Chief of the Bureau of Animal Industry had not yet received copies of the last report of said bureau. The Secretary was directed to endeavor to rectify the error.

A letter from Prof. Liautard, offering to publish free (or at a nominal cost) a copy for each member of our Association, of the full minutes of our meetings with the essays, etc., was discussed, and it was decided that all the American veterin-

ary journals should be allowed an equal chance to publish the transactions of our Association.

A motion was passed accepting the resignation of Dr. Stewart of Mt. Victory, and granting him a certificate of honorable withdrawal.

Dr. W. H. Gribble of Washington Court House, Ohio, now read an able paper on "Thoracic Choke," confining his remarks chiefly to the horse. He cited a large number of cases from his practical experience and discussed the causes, symptoms and most successful modes of treatment at some length, also the varied conditions revealed to him (rupture of œsophagus, etc.) on post mortem examination where the cases had proven fatal. The paper proved highly interesting and the discussion following it was participated in by almost every member present.

Dr. G. W. Butler of Circleville, Ohio, read a paper on "Rabies and Strongylus Tetracanthus as a coincidence in the horse." The paper evidenced considerable scientific research on the Doctor's part and it drew forth hearty applause and an interesting after discussion.

Dr. Shepard now read a paper entitled "A few Practical Hints," by Dr. S. R. Howard of Hillsboro, Ohio. The paper was well received.

The Board of Censors was abolished and those portions of the Constitution and By-laws relating thereto were amended.

Dr. G. W. Butler moved the adoption of resolutions severely censuring the Ohio Board of Live Stock Commissioners for their negligence in allowing the disposal of glandered horses in Piqua County, Ohio, and requested that a copy of said resolutions be recorded in the minutes of our meeting, and also sent to said Board of Live Stock Commissioners and to the Governor of Ohio.

A vote of thanks was tendered the City Council of Dayton, for the use of the Council Chamber.

The Secretary was ordered to urge the members of our Association to attend the meeting of the United States Veterinary Medical Association at Chicago.

The meeting then adjourned.

Most of the members remained over in Dayton the following day and were escorted through the Soldiers' Home by Dr. Howe, and also witnessed an operation upon a "roarer," at Dr. Shaw's Veterinary Infirmary. Dr. G. W. Butler administered the chloroform, while Drs. Shaw, Wight and Gribble assisted one another in the excision of the left arytenoid cartilege and thyro arytenoidean ligament.

W. J. Torrance, V.S., *Secretary*,
Cleveland, Ohio.

CORRESPONDENCE.

INQUIRY.

ASHLAND, OHIO, June 19, 1890.

Editor Veterinary Review:

I wish to inquire of some of the readers of your journal concerning the treatment of the condition in foals described

by Williams, (page 160, fifth edition), as "Scrofulous Ostitis."

A great number of cases constantly come under my observation during the spring and summer months, and the treatment either for the prevention of the escape of urine from the pervious urachus or the reduction of the inflamed and swollen condition of the joints is not always entirely satisfactory. The method that I have adopted for the closure of the urachus is as follows: a small flat needle armed with a catgut ligature, prepared in oil and carbolic acid, is passed through the skin, but to one side of the urachus, and passed out on the opposite side, and the ligature drawn through for six or eight inches; the needle is again returned through the last formed hole and passed around the urachus upon the opposite side and out the puncture first made by the needle. The ligature is then secured by a firm knot and the ends cut close. By this means the ligature is out of reach of the colt, the urachus is tied, but the skin is not strangulated below the ligature. If tied too tight the urachus becomes strangulated and sloughs from the ligature to the lumen within, and dribbling is re-established. The internal treatment that I have adopted consists of lime water with the syrup of hypophosphite of lime, soda, magnesia, &c.; by regulating the bowels and aiding digestion by the administration of pepsin, pancreatine, etc. I have never derived very marked benefits from local applications to the joints. Now if any of your readers have more successful methods of dealing with this disease, I should be greatly pleased to learn them through your columns, as it may be the means of saving many valuable animals.

Respectfully,

G. HESS, M.D., D.V.S.

VETERINARIAN WANTED.

American Veterinary College, New York City:

GENTLEMEN.—We would be pleased to have you send us a few names of your best graduates of this year or last. We are in need of a first-class veterinarian, *sober* and strictly honest. We have a town of six thousand people fifteen miles from a veterinarian; a well improved country in the oil and gas fields, four railroads and canal. If he understands his business, we will *guarantee* him success. Let us know at once if not too much trouble. Yours,

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